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REMARKS

Claims 13 and 25 have been cancelled, and claims 1-5, 10, 11, 14-17 and 22-23 have been amended. The present claims at issue are 1-12 and 14-24.

I. RESTRICTION REQUIREMENT

Pursuant to the Patent Cooperation Treaty (PCT), US code and US case law precedent, the present claims cannot be subject to restriction in the manner required by the examiner, and the restriction requirement must be withdrawn.

APPLICATION OF 35 USC §121 AND §372, AND 37 CFR §1.475 AND §1.499

Congress has delegated authority to the Patent Commissioner to allow the question of unity of invention to be reexamined in national stage PCT prosecution under 35 USC §121 *and* “within the scope of the requirements of the [PCT] and the Regulations” (35 USC §372(b)(2)). The Commissioner, in turn, has indicated that the same standard for determination of unity of invention at the international stage shall be applied to such reexamination at the national stage (37 CFR §1.475; 37 CFR §1.499). The provisions set by 37 CFR §1.141-§1.146 *are not applicable* to PCT national stage prosecution, being intended *only* to control non-PCT “national applications” (see, e.g., 37 CFR §1.141).

Further, PCT Article 27 states that

No national law shall require compliance with requirements relating to the form or contents of the international application different from or additional to those which are provided for in this Treaty and the Regulations, [unless] the national law provides ... for requirements which,

from the viewpoint of applicants, are more favorable than the [comparable PCT] requirements...

(PCT Article 27(2),(4), emphasis supplied.) Disregarding this article of the PCT, and further disregarding the express requirements of 35 USC §372, 37 CFR §1.475 and 37 CFR §1.499, the examiner has expressly applied US national application requirements stemming from 37 CFR §1.141 and §1.146. The bulk of the examiner's reasoning for maintaining the restriction requirement is as follows.

The ... instant ... inventions have achieved ... *separate status in the art*, have *separate fields that aren't coextensive*, and are *capable of supporting separate patents*. Further a prior art reference that would anticipate the claims under 35 USC 102(b) *would not render obvious the same claim(s)* under 35 U.S.C. 103(a) with respect to another member. *Searching the entire genus would be a burden* on the USPTO in terms of time and expense. *Because these inventions are distinct* for the reasons given above and *have acquired ... separate status in the art* because of their recognized *divergent subject matter*, restriction for examination purposes is proper.

...
Applicant is required ... *to elect a single species* to which the claims shall be restricted *if no generic claim is finally held to be allowable*. The reply must also *identify the claims readable on the elected species*, including any claims subsequently added. An argument that a claim is allowable or that *all claims are generic* is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of *claims to additional species* which are written in dependent form or other wise include all the limitations of an allowed generic claim *as provided by 37 CFR 1.141*.

...
The following claim(s) [sic] are generic: 1-25.

(office action p.2-4, emphasis supplied.) Each of these asserted points is an application of US national practice, explicitly so in citation of 37 CFR §1.141, and given the examiner's restriction requirement, is obviously not "more favorable than the

[comparable PCT] requirements” concerning unity of invention (PCT Article 27(4)).

Applicants respectfully submit that the application of standards stemming from 37 CFR §1.141 and §1.146 is improper in the present examination.

APPLICATION OF PCT RULE 13, ANNEX B AND 37 CFR §1.475

The present claims show unity of invention as contemplated by PCT Rule 13, Annex B and 37 CFR §1.475. Unity of invention is present where a group of inventions forms a single general inventive concept through a technical interrelationship involving the same or corresponding special technical features (PCT Rule 13.1, 13.2). For “Markush” claims, “wherein a single claim defines alternatives (chemical or non-chemical),”

the requirement of a technical interrelationship and the same or corresponding special technical features as defined in Rule 13.2, *shall* be considered to be met when the alternatives *are of a similar nature*.

(PCT Annex B(1)(f), emphasis supplied.) The requirement of “a similar nature” is, in turn, legally defined as being met where

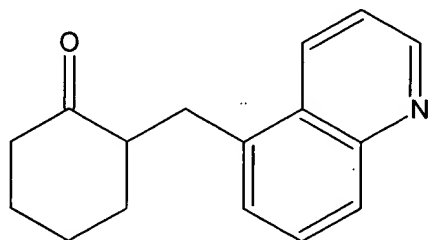
(A) all alternatives have a common property or activity, and
(B)(1) a common structure is present, i.e., a significant structural element is shared by all of the alternatives

(PCT Annex B(1)(f)(i).) From the examples in Annex B(2), the nature of the “common property” and “common structure” requirements can be elucidated.

Example 18 of Annex B(2) shows a claim drawn to a compound having the following structure:

The indolyl moiety is identified in this compound as “the significant structural element which is shared by all the alternatives” (Annex B(2)(III)). That the indolyl moiety is *known* in the prior art is of no consequence to the exemplified determination of whether or not it is a significant structural element. The common structure, therefore, does not need to be one which defines the compounds over the prior art. As to the finding of a common property, the example analysis states that “all the claimed compounds are alleged to possess the same utility” (Annex B(2)(III)). Such an allegation is sufficient to establish a common property. In this example, unity of invention is present.

Applying the above discussion to the present claims, each alternative of the invention possesses at least the following structural element in common with every other alternative:



1

This structural element is one “which occupies a large portion of [the alternatives’] structures,” and is therefore, “significant” within the above-cited requirement (Annex B(1)(f)(ii)). In addition, all presently claimed alternatives share a common property, i.e.,

they all “have very good herbicidal action” (specification p.6:46).

Accordingly, all presently claimed alternatives are “of a similar nature” as required by Annex B(1)(f)(i), and “*shall* be considered to” meet “the requirement of a technical interrelationship and the same or corresponding special technical features as defined in Rule 13.2” (Annex B(1)(f)). When a group of inventions meets this requirement, they are “so linked as to form a single general inventive concept” and meet the “requirement of unity of invention” (Rule 13.1).

Applicants respectfully request that the restriction requirement be withdrawn. Applicants further request that the Commissioner compensate the examiner for any additional burden necessitated in compliance with the provisions of PCT Rule 13, Annex B, 35 USC §372 and 37 CFR §1.475 and §1.499.

SPECIES ELECTION REQUIREMENT

In response to the examiner’s species election requirement (office action pp.3-4), applicants offer the following remarks. The examiner identifies all claims as being “generic” and yet requires election of a species and identification of all claims readable on the elected species. Further the statement is made that upon allowance of a generic claim, consideration of additional species claims may proceed. In seeming contradiction to these statements, the examiner requires that *all* claims be “restricted” to a portion of the claimed alternatives defined by the examiner. Applicants question how the examiner will consider *any* generic claims if all are required to be made non-

generic.

The examiner's requirement is not supported by US case law precedent, and is a misapplication of the species election procedure. Restriction practice in reference to genus/species claims can only occur where *both* generic *and* species claims are in existence *prior* to the requirement. As indicated by the CCPA,

As a general proposition, an applicant has a right to have *each* claim examined on the merits. If an applicant submits a number of claims, it may well be that pursuant to a proper restriction requirement, those *claims* will be dispersed to a number of applications. Such action would not affect the right of the applicant eventually to have *each of the claims* examined *in the form he considers to best define his invention*. If, however, a single claim is *required to be divided up* and presented in several applications, that claim would never be considered on its merits. *The totality of the resulting fragmentary claims would not necessarily be the equivalent of the original claim.*

(*In re Weber, Soder, and Boksay*, 580 F.2d 455, 198 USPQ 328, 331 (1978), emphasis supplied.)

In the present case, the examiner does not require restriction *between* the different claims as originally filed. Rather, the examiner requires restriction *within* each claim. This requirement has not been supported by statute or regulation, and as the above language indicates, is contrary to judicial precedent.

As the examiner has proceeded to examine the claims based on an earlier species election, applicants do not reiterate that election here. However, applicants point out that the elected species, 1a6.129, i.e., compound 2.17 on page 77 of the specification, does not actually fall within group I as defined and examined. The examiner's definition of R⁵ and R⁷ in group I of the office action, i.e., "R⁵ is OR⁷, [and] R⁷

is C₁-C₆ AK,” precludes the alkylthiocarbonyl-containing compound 2.17 from that group (office action, p.3).

CLAIMS 14-24

To further prosecution of the present claims, and to accommodate the examiner’s request, applicants have amended claims 14-24 to recite compounds of the claimed invention where R⁴ is restricted to formula (IIa). If such a restriction is acceptable to the examiner, applicants will pursue claims 14-24 only in the present application. Claims 1-12, where R⁴ is formula (IIb), will then be pursued in a divisional application.

II. REJECTION UNDER 35 USC §101

Claim 25 has been cancelled.

III. REJECTION UNDER 35 USC §112, ¶2

Amended claims 1-12 and 14-24 are sufficiently definite for purposes of 35 USC §112, ¶2. A claim is definite if one of ordinary skill in the art, when reading the claims in light of the specification, would be able to discern the subject matter circumscribed by the claims, with a *reasonable* degree of precision, and it is the examiner’s burden to *establish* any alleged deficiency (see, e.g., *Ex parte Wu*, 10 USPQ2d 2031 (BPAI 1989)).

In the present case, the words “maybe”, “at least one”, and “customarily used” are said to make the relevant claims indefinite. The word “maybe” does not occur anywhere in the present claims, and applicants assume the examiner to mean “may be.” Applicants submit that use of each of these phrases is accepted in patent examination and “ubiquitous in patent claims” (*Andrew Corp. v. Gabriel Electronics, Inc.*, 847 F.2d 819, 6 USPQ2d 2010 (Fed. Cir. 1988), *cert. denied*, 488 U.S. 927 (1988)). The examiner does not clearly indicate the reasoning behind these findings of indefiniteness, and applicants submit that they are not, therefore, *established*.

Further, the examiner indicates that claim 22 is “an improper product use claim[]” (office action p.5). Applicants respectfully point out that claim 22 is drawn to “[a] *composition*,” albeit one which may include “an agriculturally *useful* salt” or “auxiliaries ... *used* for formulating crop protection agents” (claim 22, emphasis supplied). Neither *Clinical Products v. Brenner* (149 USPQ 475 (Dist. DC 1966)) nor *Ex parte Dunki* (153 USPQ 678 (BPAI 1967)) precludes claim language of this sort.

To further prosecution on the merits, applicants have amended the present claims in a manner that will hopefully satisfy the examiner as to the definiteness of these claims under 35 USC §112, ¶2. Withdrawal of the rejection is requested.

CONCLUSION

In view of the foregoing amendments and remarks, applicants consider that the rejections of record have been obviated and respectfully solicit passage of the

application to issue.

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Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11-0345. Please credit any excess fees to such deposit account.

Respectfully submitted,
KEIL & WEINKAUF

A handwritten signature in black ink, appearing to read "David C. Liechty", with a long horizontal line extending to the right.

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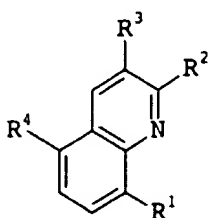
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please cancel claims 13 and 25.

Please amend claims 1-5, 10-11, 14-17, and 22-23 to read as follows:

1. (amended) A cyclohexenonequinolinoyl derivative of the formula I



where:

R¹ is hydrogen, nitro, halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxyiminomethyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylsulfonyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylsulfonyl, aminosulfonyl, N-(C₁-C₆-alkyl)aminosulfonyl, N, N-di-(C₁-C₆-alkyl) aminosulfonyl , N-(C₁-C₆-alkylsulfonyl)amino, N-(C₁-C₆-haloalkylsulfonyl)amino, N-(C₁-C₆-alkyl)-N-(C₁-C₆-alkylsulfonyl)amino, N-(C₁-C₆-alkyl)-N-(C₁-C₆-haloalkylsulfonyl)amino, phenoxy, heterocycloxy, phenylthio or heterocyclylthio, it being possible for [where] the four last-mentioned radicals to [may] be

partially or fully halogenated and/or to [may] carry one to three of

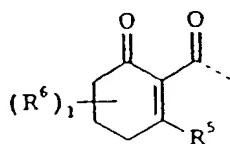
the following substituents :

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl,

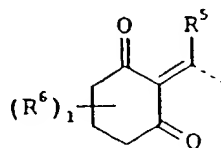
C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R², R³ are hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl or halogen;

R⁴ is a compound IIa or IIb



IIa



IIb

where

R⁵ is halogen, OR⁷, SR⁷, SOR⁸, SO₂R⁸, OSO₂R⁸, POR⁸R⁹, OPR⁸R⁹, OPOR⁸R⁹, OPSR⁸R⁹, NR¹⁰R¹¹, ONR¹¹R¹², N-linked heterocyclyl or O-(N-linked heterocyclyl), it being possible for [where] the heterocyclyl radical of the two last-mentioned substituents to [may] be partially or fully halogenated and/or to [may] carry one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R⁶ is nitro, halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, di-(C₁-C₆-alkoxy)methyl, di-(C₁-C₆-alkylthio)methyl,

(C₁-C₆-alkoxy)(C₁-C₆-alkylthio)methyl, hydroxyl,

C₁-C₆-alkoxy, C₁-C₆-haloalkoxy,

C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylthio,

C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl,

C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl,

C₁-C₆-haloalkylsulfonyl, C₁-C₆-alkylcarbonyl,

C₁-C₆-haloalkylcarbonyl, C₁-C₆-alkoxycarbonyl or

C₁-C₆-haloalkoxycarbonyl;

or

two radicals, which are linked to the same carbon,

together form an -O-(CH₂)_m-O-, -O-(CH₂)_m-S-, -S-(CH₂)_m-S-, -O-

(CH₂)_n- or -S-(CH₂)_n chain which is unsubstituted or [may be]

substituted by one to three radicals from the following group:

halogen, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl or C₁-C₄-

alkoxycarbonyl;

or

two radicals, which are linked to the same carbon,

together form a -(CH₂)_p chain which possibly is [may be]

interrupted by oxygen or sulfur and/or is unsubstituted or [may be]

substituted by one to four radicals from the following group:

halogen, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl or C₁-C₄-

alkoxycarbonyl;

or

two radicals , which are linked to the same carbon,
together form a methyldene group which is unsubstituted or [may
be] substituted by one or two radicals from the following group:
halogen, hydroxyl, formyl, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-
C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-
C₆-alkylsulfinyl, C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl or C₁-C₆-
haloalkylsulfonyl;

or

two radicals , which are linked to the same carbon,
together with this carbon form a carbonyl group;

or

two radicals , which are linked to different carbons,
together form a -(CH₂)_n chain which is unsubstituted or [may be]
substituted by one to three radicals from the following group:
halogen, C₁-C₆-alkyl, C₁-C₆-alkoxy, hydroxyl or C₁-C₆-
alkoxycarbonyl;

R⁷ is C₁-C₆,-alkyl, C₃-C₆-alkenyl, C₃-C₆-haloalkenyl,
C₃-C₆-alkynyl, C₃-C₆-haloalkynyl, C₃-C₆-cyloalkyl,
C₁-C₂₀-alkylcarbonyl, C₂-C₆-alkenylcarbonyl,

C₂-C₆-alkynylcarbonyl, C₃-C₆-cycloalkylcarbonyl,
C₁-C₆-alkoxycarbonyl, C₃-C₆-alkenyloxycarbonyl,
C₃-C₆-alkynyloxycarbonyl,
(C₁-C₂₀-alkylthio)carbonyl,
C₁-C₆-alkylaminocarbonyl,
C₃-C₆-alkenylaminocarbonyl,
C₃-C₆-alkynylaminocarbonyl,
N,N-di-(C₁-C₆-alkyl)aminocarbonyl,
N-(C₃-C₆-alkenyl)-N-(C₁-C₆-alkyl) aminocarbonyl ,
N-(C₃-C₆-alkynyl)-N-(C₁-C₆-alkyl) aminocarbonyl ,
N-(C₁-C₆-alkoxy)-
N-(C₁-C₆-alkyl) aminocarbonyl , N-(C₃-C₆-alkenyl)-
N-(C₁-C₆-alkoxy) aminocarbonyl , N-(C₃-C₆-alkynyl)-
N-(C₁-C₆-alkoxy) aminocarbonyl, di-(C₁-C₆-alkyl)-
aminothiocarbonyl, C₁-C₆-alkylcarbonyl-C₁-C₆-alkyl,
C₁-C₆-alkoxyimino-C₁-C₆-alkyl,
N-(C₁-C₆-alkylamino) imino-C₁-C₆-alkyl or
N,N-di-(C₁-C₆-alkylamino)imino-C₁-C₆-alkyl, it being possible for [where]
the above-mentioned alkyl, cycloalkyl and alkoxy radicals to [may] be
partially or fully halogenated and/or to [may] carry one to three of the
following groups:

cyano, C₁-C₄-alkoxy, C₁-C₄-alkylthio, di-(C₁-C₄- alkyl)amino, C₁-C₄-alkylcarbonyl, C₁-C₄-alkoxycarbonyl, C₁-C₄-alkoxy-C₁-C₄-alkoxycarbonyl, di-(C₁-C₄-alkyl)amino-C₁-C₄-alkoxycarbonyl, hydroxycarbonyl, C₁-C₄-alkylaminocarbonyl, di-(C₁-C₄-alkyl)aminocarbonyl, aminocarbonyl, C₁-C₄-alkylcarbonyloxy or C₃-C₆-cycloalkyl;

phenyl, heterocyclyl, phenyl-C₁-C₆-alkyl, heterocyclyl-C₁-C₆-alkyl, phenylcarbonyl-C₁-C₆-alkyl, heterocyclylcarbonyl-C₁-C₆-alkyl, phenylcarbonyl, heterocyclylcarbonyl, phenoxycarbonyl, heterocycliloxy carbonyl, phenoxythiocarbonyl, heterocycliloxythiocarbonyl, phenoxy-C₁-C₆-alkylcarbonyl, heterocycliloxy-C₁-C₆-alkylcarbonyl, phenylaminocarbonyl, N-(C₁-C₆-alkyl)-N-(phenyl)aminocarbonyl, heterocyclylaminocarbonyl, N-(C₁-C₆-alkyl)-N-(heterocyclyl)aminocarbonyl, phenyl-C₂-C₆-alkenylcarbonyl or [alkenylcarbonyl or] heterocyclyl-C₂-C₆-

alkenylcarbonyl, it being possible for [where] the phenyl and the heterocyclyl radical of the 20 last-mentioned substituents to [may] be partially or fully halogenated and/or to [may] carry one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-halogenalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R^8, R^9 are C_1 - C_6 -alkyl, C_3 - C_6 -alkenyl, C_3 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl, C_3 - C_6 -haloalkynyl, C_3 - C_6 -cycloalkyl, hydroxyl, C_1 - C_6 -alkoxy, amino, C_1 - C_6 -alkylamino, C_1 - C_6 -haloalkylamino, di- $(C_1$ - C_6 -alkyl) amino or di- $(C_1$ - C_6 -haloalkyl) amino, it being possible for [where] the abovementioned alkyl, cycloalkyl and alkoxy radicals to [may] be partially or fully halogenated and/or to [may] carry one to three of the following groups:

cyano, C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, di- $(C_1$ - C_4 -alkyl) amino, C_1 - C_4 -alkylcarbonyl, C_1 - C_4 -alkoxycarbonyl, C_1 - C_4 -alkoxy- C_1 - C_4 -alkoxycarbonyl, di- $(C_1$ - C_4 -alkyl) amino- C_1 - C_4 -alkoxycarbonyl, hydroxycarbonyl, C_1 - C_4 -alkylaminocarbonyl, di- $(C_1$ - C_4 -alkyl) aminocarbonyl, aminocarbonyl, C_1 - C_4 -alkylcarbonyloxy or C_3 - C_6 -cycloalkyl;

phenyl, heterocyclyl, phenyl- C_1 - C_6 -alkyl, heterocyclyl- C_1 - C_6 -alkyl, phenoxy, heterocycliloxy, it being possible for [where] the phenyl and the heterocyclyl radical of the last-mentioned substituents to [may] be partially or fully halogenated and/or to [may] carry one to three of the following radicals:

nitro, cyano, C_1 - C_4 -alkyl, C_1 - C_4 -haloalkyl, C_1 - C_4 -alkoxy or C_1 - C_4 -haloalkoxy;

R^{10} is C_1 - C_6 -alkyl, C_3 - C_6 -alkenyl, C_3 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl, C_3 -

C₆-haloalkynyl, C₃-C₆-cycloalkyl, hydroxyl, C₁-C₆-alkoxy, C₃-C₆-alkenyloxy, C₃-C₆-alkynyloxy, amino, C₁-C₆-alkylamino, di-(C₁-C₆-alkyl)amino or C₁-C₆-alkylcarbonylamino, where the abovementioned alkyl, cycloalkyl and alkoxy radicals may be partially or fully halogenated and/or may carry one to three radicals from the following group:

cyano, C₁-C₄-alkoxy, C₁-C₄-alkylthio, di-(C₁-C₄-alkyl)amino, C₁-C₄-alkylcarbonyl, C₁-C₄-alkoxycarbonyl, C₁-C₄-alkoxy-C₁-C₄-alkoxycarbonyl, di-(C₁-C₄-alkyl)amino-C₁-C₄-alkoxycarbonyl, hydroxycarbonyl, C₁-C₄-alkylaminocarbonyl, di-(C₁-C₄-alkyl)aminocarbonyl, aminocarbonyl, C₁-C₄-alkylcarbonyloxy or C₃-C₆-cycloalkyl;

phenyl, heterocyclyl, phenyl-C₁-C₆-alkyl or heterocyclyl-C₁-C₆-alkyl, where the phenyl or heterocyclyl radical of the four last-mentioned substituents may be partially or fully halogenated and/or may carry one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R¹¹, R¹² are C₁-C₆-alkyl, C₃-C₆-alkenyl, C₃-C₆-alkynyl or C₁-C₆-alkylcarbonyl;

l is 0 to 6;

m is 2 to 4;

n is 1 to 5;

p is 2 to 5;

and their agriculturally useful salts.

2. (amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 1 where

R¹ is halogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxy, C₁-C₆-alkylthio, heterocycloxy or phenylthio, it being possible for [where] the two last-mentioned radicals to [may] be partially or fully halogenated and/or to [may] carry one to three of the substituents mentioned below:
nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R⁵ is halogen, OR⁷, SR⁷, SOR⁸, SO₂R⁸, OSO₂R⁸, OPR⁸R⁹, OPOR⁸R⁹, OPSR⁸R⁹, NR¹⁰R¹¹ or N-bonded heterocyclyl, which is unsubstituted or [may be] partially or fully halogenated and/or carries [may carry] one to three of the following radicals:
nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy .

3. (twice amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim I, where

R⁵ is halogen, OR⁷, NR¹⁰R¹¹ or N-bonded heterocyclyl which is unsubstituted or [may be] partially or fully halogenated and/or carries [may carry] one to

three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy.

4. (twice amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 1, where

R⁷ is C₁-C₆-alkyl, C₁-C₂₀-alkylcarbonyl, C₁-C₆-alkoxycarbonyl, (C₁-C₂₀-alkylthio)carbonyl, N,N-di-(C₁-C₆-alkyl)aminocarbonyl, phenyl, phenylcarbonyl or phenoxy-C₁-C₆-alkylcarbonyl, it being possible for [where] the phenyl radical of the three last-mentioned substituents to [may] be partially or fully halogenated and/or to [may] carry one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R¹⁰ is C₁-C₆-alkyl or C₁-C₆-alkoxy;

R¹¹ is C₁-C₆-alkyl.

5. (twice amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 1, where

R⁶ is nitro, halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, di-(C₁-C₆-alkoxy)methyl, di-(C₁-C₆-alkylthio)methyl, (C₁-C₆-alkoxy)(C₁-C₆-alkylthio)-

methyl, hydroxyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylsulfonyl, C₁-C₆-alkylcarbonyl, C₁-C₆-haloalkylcarbonyl, C₁-C₆-alkoxycarbonyl or C₁-C₆-haloalkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form an -O-(CH₂)_m-O-, -O-(CH₂)_m-S-, -S-(CH₂)_m-S-, -O-(CH₂)_n- or -S-(CH₂)_n chain which is unsubstituted or [may be] substituted by one to three radicals from the following group:

halogen, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl or C₁-C₄-alkoxycarbonyl;

or

two radicals, which are linked to the same carbon, together form a -(CH₂)_p chain which possibly is [may be] interrupted by oxygen or sulfur and[/or may be] which is unsubstituted or substituted by one to four radicals from the following group:

halogen, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl or C₁-C₄-alkoxycarbonyl;

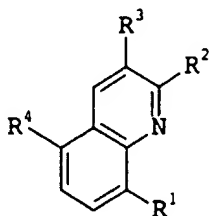
or

two radicals, which are linked to the same carbon, together with this carbon form a carbonyl group.

10. (twice amended) A composition, comprising a herbicidally effective amount of at

least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I as claimed in claim 1 and auxiliaries which are conventionally [customarily] used for formulating crop protection agents.

11. (twice amended) A process for preparing a composition [compositions] as claimed in claim 10, which comprises mixing a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I and auxiliaries which are conventionally [customarily] used for formulating crop protection agents.
14. (amended) A cyclohexenonequinolinoyl derivative of the formula I



where:

R¹ is hydrogen, nitro, halogen, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxyiminomethyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl, C₁-C₆-haloalkylsulfonyl, aminosulfonyl, N-(C₁-C₆-alkyl)aminosulfonyl, N, N-di-(C₁-C₆-alkyl) aminosulfonyl , N-(C₁-C₆-alkylsulfonyl)amino, N-(C₁-C₆-haloalkylsulfonyl)amino,

N-(C₁-C₆-alkyl)-N-(C₁-C₆-alkylsulfonyl)amino,

N-(C₁-C₆-alkyl)-N-(C₁-C₆-haloalkylsulfonyl)amino,

phenoxy, heterocycloxy, phenylthio or heterocyclylthio, it being possible

for [where] the four last-mentioned radicals to [may] be partially or fully

halogenated and/or to [may] carry one to three of the following

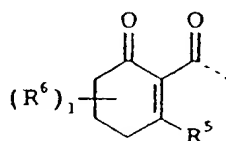
substituents :

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl,

C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R², R³ are hydrogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl or halogen;

R⁴ is a compound IIa



IIa

where

R⁵ is halogen, OR⁷, SR⁷, SOR⁸, SO₂R⁸, OSO₂R⁸, POR⁸R⁹, OPR⁸R⁹,

OPOR⁸R⁹, OPSR⁸R⁹, NR¹⁰R¹¹, ONR¹¹R¹², N-linked heterocyclyl or

O-(N-linked heterocyclyl), it being possible for [where] the

heterocyclyl radical of the two last-mentioned substituents to [may]

be partially or fully halogenated and/or to [may] carry one to three

of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-

haloalkoxy;

R⁶ is nitro, halogen, cyano, C₁-C₆-alkyl,

C₁-C₆-haloalkyl, di-(C₁-C₆-alkoxy)methyl,
di-(C₁-C₆-alkylthio)methyl,
(C₁-C₆-alkoxy)(C₁-C₆-alkylthio)methyl, hydroxyl,
C₁-C₆-alkoxy, C₁-C₆-haloalkoxy,
C₁-C₆-alkoxycarbonyloxy, C₁-C₆-alkylthio,
C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl,
C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl,
C₁-C₆-haloalkylsulfonyl, C₁-C₆-alkylcarbonyl,
C₁-C₆-haloalkylcarbonyl, C₁-C₆-alkoxycarbonyl or
C₁-C₆-haloalkoxycarbonyl;

or

two radicals, which are linked to the same carbon,
together form an -O-(CH₂)_m-O-, -O-(CH₂)_m-S-, -S-(CH₂)_m-S-, -O-
(CH₂)_n- or -S-(CH₂)_n chain which is unsubstituted or substituted by
one to three radicals from the following group:
halogen, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl or C₁-C₄-
alkoxycarbonyl;

or

two radicals, which are linked to the same carbon,
together form a -(CH₂)_p chain which possibly is interrupted by
oxygen or sulfur and/or is unsubstituted or substituted by one to

four radicals from the following group:

halogen, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl or C₁-C₄-alkoxycarbonyl:

or

two radicals, which are linked to the same carbon, together form a methyldene group which is unsubstituted or substituted by one or two radicals from the following group:

halogen, hydroxyl, formyl, cyano, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, C₁-C₆-alkylthio, C₁-C₆-haloalkylthio, C₁-C₆-alkylsulfinyl, C₁-C₆-haloalkylsulfinyl, C₁-C₆-alkylsulfonyl or C₁-C₆-haloalkylsulfonyl:

or

two radicals, which are linked to the same carbon, together with this carbon form a carbonyl group:

or

two radicals, which are linked to different carbons, together form a -(CH₂)_n chain which is unsubstituted or substituted by one to three radicals from the following group:
halogen, C₁-C₆-alkyl, C₁-C₆-alkoxy, hydroxyl or C₁-C₆-alkoxycarbonyl:

R^7 is C_1 - C_6 -alkyl, C_3 - C_6 -alkenyl, C_3 - C_6 -haloalkenyl,
 C_3 - C_6 -alkynyl, C_3 - C_6 -haloalkynyl, C_3 - C_6 -cyloalkyl,
 C_1 - C_{20} -alkylcarbonyl, C_2 - C_6 -alkenylcarbonyl,
 C_2 - C_6 -alkynylcarbonyl, C_3 - C_6 -cyloalkylcarbonyl,
 C_1 - C_6 -alkoxycarbonyl, C_3 - C_6 -alkenyloxycarbonyl,
 C_3 - C_6 -alkynyloxycarbonyl,
(C_1 - C_{20} -alkylthio)carbonyl,
 C_1 - C_6 -alkylaminocarbonyl,
 C_3 - C_6 -alkenylaminocarbonyl,
 C_3 - C_6 -alkynylaminocarbonyl,
N,N-di-(C_1 - C_6 -alkyl)aminocarbonyl,
N-(C_3 - C_6 -alkenyl)-N-(C_1 - C_6 -alkyl)aminocarbonyl,
N-(C_3 - C_6 -alkynyl)-N-(C_1 - C_6 -alkyl)aminocarbonyl,
N-(C_1 - C_6 -alkoxy)-
N-(C_1 - C_6 -alkyl)aminocarbonyl, N-(C_3 - C_6 -alkenyl)-
N-(C_1 - C_6 -alkoxy)aminocarbonyl, N-(C_3 - C_6 -alkynyl)-
N-(C_1 - C_6 -alkoxy)aminocarbonyl, di-(C_1 - C_6 -alkyl)-
aminothiocarbonyl, C_1 - C_6 -alkylcarbonyl- C_1 - C_6 -alkyl,
 C_1 - C_6 -alkoxyimino- C_1 - C_6 -alkyl,
N-(C_1 - C_6 -alkylamino)imino- C_1 - C_6 -alkyl or
N,N-di-(C_1 - C_6 -alkylamino)imino- C_1 - C_6 -alkyl, it being possible for [where]

the above-mentioned alkyl, cycloalkyl and alkoxy radicals to [may] be partially or fully halogenated and/or to [may] carry one to three of the following groups:

cyano, C₁-C₄-alkoxy, C₁-C₄-alkylthio, di-(C₁-C₄- alkyl)amino, C₁-C₄-alkylcarbonyl, C₁-C₄-alkoxycarbonyl, C₁-C₄-alkoxy-C₁-C₄-alkoxycarbonyl, di-(C₁-C₄-alkyl)amino-C₁-C₄-alkoxycarbonyl, hydroxycarbonyl, C₁-C₄-alkylaminocarbonyl, di-(C₁-C₄-alkyl)aminocarbonyl, aminocarbonyl, C₁-C₄-alkylcarbonyloxy or C₃-C₆-cycloalkyl;

phenyl, heterocyclyl, phenyl-C₁-C₆-alkyl, heterocyclyl-C₁-C₆-alkyl,

phenylcarbonyl-C₁-C₆-alkyl, heterocyclylcarbonyl-C₁-C₆-alkyl,

phenylcarbonyl, heterocyclylcarbonyl, phenoxycarbonyl,

heterocycliloxy carbonyl, phenoxythiocarbonyl,

heterocycliloxythiocarbonyl, phenoxy-C₁-C₆-alkylcarbonyl,

heterocycliloxy-C₁-C₆-alkylcarbonyl, phenylaminocarbonyl, N-(C₁-C₆-

alkyl)-N-(phenyl)aminocarbonyl, heterocyclylaminocarbonyl, N-(C₁-C₆-

alkyl)-N-(heterocyclyl)aminocarbonyl, phenyl-C₂-C₆-alkenylcarbonyl or

[phenyl-C₂-C₆-alkenylcarbonyl or] heterocyclyl-C₂-C₆-alkenylcarbonyl, it being possible for [where] the phenyl and the heterocyclyl radical of the 20

last-mentioned substituents to [may] be partially or fully halogenated and/or to [may] carry one to three of the following radicals:

nitro, cyano, C₁-C₄-alkyl, C₁-C₄-halogenalkyl, C₁-C₄-alkoxy or C₁-C₄-

haloalkoxy;

R^8, R^9 are C_1 - C_6 -alkyl, C_3 - C_6 -alkenyl, C_3 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl, C_3 - C_6 -haloalkynyl, C_3 - C_6 -cycloalkyl, hydroxyl, C_1 - C_6 -alkoxy, amino, C_1 - C_6 -alkylamino, C_1 - C_6 -haloalkylamino, di- $(C_1$ - C_6 -alkyl) amino or di- $(C_1$ - C_6 -haloalkyl) amino, it being possible for [where] the

abovementioned alkyl, cycloalkyl and alkoxy radicals to [may] be partially or fully halogenated and/or to [may] carry one to three of the following groups:

cyano, C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, di- $(C_1$ - C_4 -alkyl) amino, C_1 - C_4 -alkylcarbonyl, C_1 - C_4 -alkoxycarbonyl, C_1 - C_4 -alkoxy- C_1 - C_4 -alkoxycarbonyl, di- $(C_1$ - C_4 -alkyl) amino- C_1 - C_4 -alkoxycarbonyl,

hydroxycarbonyl, C_1 - C_4 -alkylaminocarbonyl, di- $(C_1$ - C_4 -alkyl) aminocarbonyl, aminocarbonyl, C_1 - C_4 -alkylcarbonyloxy or C_3 - C_6 -cycloalkyl;

phenyl, heterocyclyl, phenyl- C_1 - C_6 -alkyl, heterocyclyl- C_1 - C_6 -alkyl, phenoxy, heterocycliloxy, it being possible for [where] the phenyl and the heterocyclyl radical of the last-mentioned substituents to [may] be partially or fully halogenated and/or to [may] carry one to three of the following radicals:

nitro, cyano, C_1 - C_4 -alkyl, C_1 - C_4 -haloalkyl, C_1 - C_4 -alkoxy or C_1 - C_4 -haloalkoxy;

R^{10} is C_1 - C_6 -alkyl, C_3 - C_6 -alkenyl, C_3 - C_6 -haloalkenyl, C_3 - C_6 -alkynyl, C_3 - C_6 -haloalkynyl, C_3 - C_6 -cycloalkyl, hydroxyl, C_1 - C_6 -alkoxy, C_3 - C_6 -alkenyloxy, C_3 - C_6 -alkynyloxy, amino, C_1 - C_6 -alkylamino, di- $(C_1$ - C_6 -alkyl)amino or C_1 - C_6 -alkylcarbonylamino, it being possible for [where] the abovementioned alkyl, cycloalkyl and alkoxy radicals to [may] be partially or fully halogenated and/or to [may] carry one to three radicals from the following group:

cyano, C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, di- $(C_1$ - C_4 -alkyl)amino, C_1 - C_4 -alkylcarbonyl, C_1 - C_4 -alkoxycarbonyl, C_1 - C_4 -alkoxy- C_1 - C_4 -alkoxycarbonyl, di- $(C_1$ - C_4 -alkyl)amino- C_1 - C_4 -alkoxycarbonyl, hydroxycarbonyl, C_1 - C_4 -alkylaminocarbonyl, di- $(C_1$ - C_4 -alkyl)aminocarbonyl, aminocarbonyl, C_1 - C_4 -alkylcarbonyloxy or C_3 - C_6 -cycloalkyl;

phenyl, heterocyclyl, phenyl- C_1 - C_6 -alkyl or heterocyclyl- C_1 - C_6 -alkyl, it being possible for [where] the phenyl or heterocyclyl radical of the four last-mentioned substituents to [may] be partially or fully halogenated and/or to [may] carry one to three of the following radicals:

nitro, cyano, C_1 - C_4 -alkyl, C_1 - C_4 -haloalkyl, C_1 - C_4 -alkoxy or C_1 - C_4 -haloalkoxy;

R^{11} , R^{12} are C_1 - C_6 -alkyl, C_3 - C_6 -alkenyl, C_3 - C_6 -alkynyl or C_1 - C_6 -alkylcarbonyl;

l is 0 to 6;

m is 2 to 4;

n is 1 to 5;

p is 2 to 5;

and their agriculturally useful salts.

15. (amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 14, where

R^1 is halogen, C_1 - C_6 -alkyl, C_1 - C_6 -haloalkyl, C_1 - C_6 -alkoxy, C_1 - C_6 -alkylthio, heterocycloxy or phenylthio, it being possible for [where] the two last-mentioned radicals to [may] be partially or fully halogenated and/or to [may] carry one to three of the substituents mentioned below:
nitro, cyano, C_1 - C_4 -alkyl, C_1 - C_4 -haloalkyl, C_1 - C_4 -alkoxy or C_1 - C_4 -haloalkoxy;

R^5 is halogen, OR^7 , SR^7 , SOR^8 , SO_2R^8 , OSO_2R^8 , OPR^8R^9 , $OPOR^8R^9$, $OPSR^8R^9$, $NR^{10}R^{11}$ or N-bonded heterocyclyl which is unsubstituted or [may be] partially or fully halogenated and/or carries [may carry] one to three of the following radicals:
nitro, cyano, C_1 - C_4 -alkyl, C_1 - C_4 -haloalkyl, C_1 - C_4 -alkoxy or C_1 - C_4 -haloalkoxy .

16. (amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 14, where

R⁵ is halogen, OR⁷, NR¹⁰R¹¹ or N-bonded heterocyclyl which is unsubstituted or [may be] partially or fully halogenated and/or carries [may carry] one to three of the following radicals:
nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy.

17. (amended) A cyclohexenonequinolinoyl derivative of the formula I as claimed in claim 14, where

R⁷ is C₁-C₆-alkyl, C₁-C₂₀-alkylcarbonyl, C₁-C₆-alkoxycarbonyl, (C₁-C₂₀-alkylthio)carbonyl, N,N-di-(C₁-C₆-alkyl)aminocarbonyl, phenyl, phenylcarbonyl or phenoxy-C₁-C₆-alkylcarbonyl, it being possible for [where] the phenyl radical of the three last-mentioned substituents to [may] be partially or fully halogenated and/or to [may] carry one to three of the following radicals:
nitro, cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₄-haloalkoxy;

R¹⁰ is C₁-C₆-alkyl or C₁-C₆-alkoxy;

R¹¹ is C₁-C₆-alkyl.

22. (amended) A composition, comprising a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I as claimed in claim 14 and auxiliaries which are

conventionally [customarily] used for formulating crop protection agents.

23. (amended) A process for preparing a composition [compositions] as claimed in claim 22, which comprises mixing a herbicidally effective amount of at least one cyclohexenonequinolinoyl derivative of the formula I or an agriculturally useful salt of formula I and auxiliaries which are conventionally [customarily] used for formulating crop protection agents.